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roll bellows, whose interior is filled with a fluid and communicates with a hydraulic accumulator supported on the chassis and/or vehicle body. On the basis of the present invention, a combined spring-and-shock-absorber system is developed, which contains a friction-free displacement device in a thin construction.--.

REMARKS

I. Introduction

Claims 17 to 31 are pending in the present application. In view of the foregoing amendments and following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all of the copies of the certified copies of the priority documents have been received from the International Bureau.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Objection to the Declaration

The Office Action objected to the Declaration under 37 C.F.R. § 1.67(a). Applicants enclose herewith a supplemental declaration. In view of the foregoing, it is respectfully submitted that the present objection has been obviated, and withdrawal of this objection is respectfully requested.

III. Objection to the Abstract

The Abstract was objected to because it contained more than one paragraph. The Abstract has been amended so that it is now contained in one paragraph. Accordingly, withdrawal of the objection to the Abstract is respectfully requested.

IV. Rejection of Claims 17 to 31 Under 35 U.S.C. § 103(a)

A. Rejection of Claims 17 to 23

Claims 17 to 23 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 4,493,481 ("Merkle '481") in view of U.S. Patent No. 4,518,154 ("Merkle '154"). Applicants respectfully submit that claims 17 to 23 are allowable for the following reasons.

Claim 17 relates to a combined spring-and-shock-absorber system for supporting at least one of wheel suspensions and axles on a vehicle body. Claim 17 recites that the spring-and-shock-absorber system includes an outer bell, a rolling piston, a tubular roll bellows, and a hydraulic accumulator, supported on at least one of a chassis side and a vehicle body side. Claim 17 further recites that the bellows is positioned between one of a wheel-bearing and wheel-controlling connection and a connection on a vehicle body side and that the bellows is arranged between the outer bell and the rolling piston. Claim 17 further recites that the outer bell and the rolling piston each have at least partially varying diameters over a height of the respective component. Claim 17 further recites that the outer bell and the rolling piston each have walls that contact the bellows and that ends of the bellows are sealingly secured to the rolling piston at segments having different diameters. Claim 17 further recites that a lower mounting section of the bellows has a larger diameter than an upper mounting section of the bellows and that the bellows has a bellows interior filled with a fluid and is configured to communicate with the hydraulic accumulator.

Merkle '481 purportedly relates to a pneumatic spring for motor vehicles. Abstract. Merkle '481 states that the pneumatic spring includes two cup-shaped spring pistons 5, 6 which support the ends of roll bellows 2, 3. See col. 4, lines 44 to 47. Cup-shaped spring piston 5 is stated to be sealed off from the outside and is stated to define an air chamber 21. Air chamber 21 is stated to be connected by holes or apertures 22 in a bottom wall of piston 6 to the main chamber 4 so that air chamber 21 in practice forms a portion of the total or main chamber value for the pneumatic or air spring 1. See col. 6, lines 3 to 14. Merkle '481 does not disclose, or even suggest, use of a hydraulic accumulator in communication with bellows, as recited in claim 17. Further, as the Office Action admits, Merkle '481 does not disclose a lower mounting bellows section having a larger diameter than an upper mounting bellows section, as recited in claim 17. Office Action at p.3.

Merkle '154 purportedly relates to a pneumatic spring for motor vehicles. Abstract. Merkle '154 states that the pneumatic spring includes two cup-shaped spring pistons 5, 6 which support the ends of roll bellows 2, 3. See col. 4, lines 20 to 27. In the construction of Figure 4, a hydraulic damping is stated to be provided whereby the damping unit is disposed in the spring piston 6 with a damping piston 15 being connected to a tie rod 7. The damping system is stated to be provided with throttle openings 16. Cross bores 20 are stated to provide the necessary communication between the annular space 19 and the damping chamber 17. See col. 7, lines 7 to 21. Chamber 17 is not in communication with bellows 2,

3. Accordingly, Merkle '154 does not disclose, or even suggest, use of a hydraulic accumulator in communication with a bellows, as recited in claim 17.

Claim 17 recites a hydraulic accumulator that is supported on at least one of a chassis side and a vehicle body side and a tubular roll bellows. Claim 17 further recites that a lower mounting section of the bellows has a larger diameter than an upper mounting section of the bellows. Claim 17 further recites that the bellows has a bellows interior filled with a fluid and is configured to communicate with the hydraulic accumulator. As indicated above and as the Office Action admits, Merkle '481 does not disclose a lower mounting section of the bellows having a larger diameter than an upper mounting section of the bellows. Office Action at p. 3. Further as indicated above, neither Merkle '154 nor Merkle '481 discloses, or even suggests, use of a hydraulic accumulator in communication with bellows. As regards the Office Action's apparent assertion that interior space 221 illustrated in Figure 3 of Merkle '481 corresponds to the hydraulic accumulator recited in claim 17, Merkle '481 makes clear that the interior space 221 does not communicate with the main chamber 204. Accordingly, Merkle '481 does not disclose, or even suggest, at least the limitation of "a bellows interior filled with a fluid and configured to communicate with the hydraulic accumulator as recited in claim 17. Accordingly, Merkle '481 does not disclose, or even suggest, all of the claim limitations of claim 17, and Merkle '154 does not cure the above noted defects of Merkle '481. That is, the combination of Merkle '481 and Merkle '154 does not disclose, or even suggest, all of the limitations of claim 17.

The Office Action alleges that element 221 of Merkle '481 is an accumulator. See Office Action at p. 3, line 2. However, claim 17 recites a hydraulic accumulator and bellows configured to communicate with the hydraulic accumulator. Element 221 is not in communication with bellows 2, 3. Further, chambers 21 and 121 cannot be considered to be hydraulic accumulators as they are referred to as air chambers. See col. 6, lines 10 and lines 32 to 35. Accordingly, Applicants respectfully submit that the combination of Merkle '154 and Merkle '481 does not disclose, or even suggest, all of the limitations of claim 17.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art

and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As stated above, the combination of Merkle '154 and Merkle '481 fails to disclose, or even suggest, each and every feature of claim 17. Specifically, Merkle '481 does not disclose, or even suggest, a lower mounting section of the bellows 2, 3 having a larger diameter than an upper mounting section of the bellows. Further, neither Merkle '154 nor Merkle '481 discloses, or even suggests, use of a hydraulic accumulator in communication with bellows. It is therefore respectfully submitted that the combination of Merkle '154 and Merkle '481 does not render obvious claim 17.

Moreover, it is respectfully submitted that the cases of *In re Fine*, *supra*, and *In re Jones*, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of *In re Fine* stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of *In re Jones* stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of *In re Kotzab* has made plain that even if a claim concerns a "technologically simple concept" -- which is not the case here -- there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claimed subject matter to "make the combination in the manner claimed," stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

That the present rejection is based on nothing more than hindsight is readily apparent from the assertion that "[i]t would have been obvious to one of ordinary skill in the art to have utilized a larger diameter lower mounting portion in Merkle '481 in view of the

teaching of Merkle '154 depending on the size of the shock absorber connecting to the spring.” Office Action at p. 3. Obviousness must be determined with reference to that which would have been obvious to one of ordinary skill in the art at the time the invention was made. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 218 U.S.P.Q. 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984). The Office Action does not even allege that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Merkle '481 and Merkle '154. It is therefore respectfully submitted that the present rejection does not properly support an obviousness determination under 35 U.S.C. § 103(a) and should therefore be withdrawn.

Accordingly, there is no evidence that the references relied upon, whether taken alone, combined or modified, would provide the features and benefits of claim 17 herein. It is therefore respectfully submitted that claim 17 is allowable for these reasons.

As for claims 18 to 23, which ultimately depend from claim 17 and therefore include all of the limitations of claim 17, it is respectfully submitted that the combination of Merkle '154 and Merkle '481 does not render obvious these dependent claims for at least the same reasons given above in support of the patentability of claim 17. *In re Fine, supra* (any dependent claim depending from a non-obvious independent claim is non-obvious).

As for claim 20, Applicants submit the following additional reasons in support of patentability of claim 20. Claim 20 depends from claim 17 and further recites a working line that passes through the outer bell. In regard to claims 18 to 21, the Office Action alleges generally that Merkle '481 shows the recited features. Office Action at p. 3. However, the Office Action does not indicate where Merkle '481 discloses or suggests a working line that passes through the outer bell, as recited in claim 20. Applicants submit that neither Merkle '481 nor Merkle '154 discloses, or even suggests, a working line that passes through the outer bell. Accordingly, withdrawal of the 35 U.S.C. § 103(a) and allowance of claim 20 is respectfully requested.

B. Rejection of Claims 24 to 31

Claims 24 to 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Merkle '481, Merkle '154 and UK Patent Application No. 2 318 851 (“Heyring et al.”). Applicants respectfully submit that claims 24 to 31 are allowable for the following reasons.

Heyring et al. purportedly relate to a fluid actuator for a vehicle suspension system. Abstract. Heyring et al. state that the fluid actuator includes two flexible-wall fluid-filled bags 2, 3 and a piston assembly 5 stated to be coupled to a suspension joint 17 and including cone-shaped portions 16, 16a engaging the bags. Abstract.

Claim 24 relates to a combined spring-and-shock-absorber system for supporting one of wheel suspensions and axles on a vehicle body. Claim 24 recites that the spring-and-shock-absorber system includes an outer bell, a rolling piston, an accumulator, having a volume, and a tubular roll bellows positioned between one of a wheel-bearing and wheel-controlling connection and a connection on the vehicle body side. Claim 24 further recites that the bellows is arranged between the outer bell and the rolling piston and that the outer bell and the rolling piston each have at least partially varying diameters over a height of the respective component. Claim 24 further recites that the outer bell and the rolling piston each have walls that contact the bellows and that ends of the bellows are sealingly secured on the rolling piston at segments having different diameters. Claim 24 further recites that a lower mounting section of the bellows has a larger diameter than an upper mounting section of the bellows and that the bellows encloses a bellows interior filled with a volume of gas. Claim 24 further recites that the bellows interior is controllably connected to the accumulator volume and to a pressure pump via tubular connectors located in the wall of the outer bell.

As more fully set forth above and as the Office Action admits, Merkle '481 does not disclose a lower bellows mounting section having a larger diameter than an upper bellows mounting section, as recited in claim 24. See Office Action at p. 3. Further, as more fully set forth above, Merkle '154 does not disclose, or even suggest, an accumulator in communication with a bellows. Accordingly, Merkle '154 does not disclose, or even suggest, a bellows interior controllably connected to the accumulator volume, as recited in claim 24. Applicants further submit that the combination of Merkle '481, Merkle '154 and Heyring et al. does not disclose, or even suggest, a bellows interior controllably connected to the accumulator volume via tubular connectors located in the wall of the outer bell, as recited in claim 24. Nor does the combination of Merkle '481, Merkle '154 and Heyring et al. disclose, or even suggest, a bellows interior controllably connected to a pressure pump via tubular connectors located in the wall of the outer bell, as recited in claim 24. It is therefore respectfully submitted that independent claim 24 is patentable over the combination of Merkle '481, Merkle '154 and Heyring et al.

The Office Action alleges that Heyring et al. show an accumulator 12 connected to bellows 2, 3. However, the connection of accumulator 12 to bellows 2, 3 in Heyring et al. in no way discloses the connection of an accumulator via tubular connectors to a bellows arranged between an outer bell and a rolling piston, as recited in claim 24. In Heyring et al. the accumulator may be connected directly to the bellows but the bellows are not arranged between an outer bell and a rolling piston, as recited in claim 24. In Merkle '481, the alleged accumulator 221 is illustrated in Figure 3 as being within the cup wall 213 of the piston, which is disposed within bell 16. There is no disclosure or suggestion in any of the references relied upon to place tubular connectors in the wall of the outer bell or to connect the accumulator via such tubular connectors. The connection of an accumulator directly to a bellows not enclosed in a bell, as in Heyring et al., in no way discloses or suggests modification of a system already having an accumulator disposed within a bell by connecting the accumulator through the bell. Accordingly, Heyring et al. does not cure the above noted defects of Merkle '481. Therefore, Applicants submit that the combination of Merkle '481, Merkle '154 and Heyring et al. does not render obvious claim 24. Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claim 24 is respectfully requested.

That the present rejection is based on nothing more than hindsight is readily apparent from the assertion that “[i]t would have been obvious to one of ordinary skill in the art to have attached an accumulator to Merkle '481, as modified un view of the teaching of UK '851 [Heyring et al.] as an accessory feature as taught by UK '851 [Heyring et al.]” Office Action at p. 4. Thus, the Office Action does not even allege that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Merkle '481, Merkle '154 and Heyring et al. It is therefore respectfully submitted that the present rejection does not properly support an obviousness determination under 35 U.S.C. § 103(a) and should therefore be withdrawn.

As for claims 25 to 31, which ultimately depend from claim 24 and therefore include all of the limitations of claim 24, Applicants submit that these claims are allowable for at least the same reasons submitted in support of the patentability of claim 24. *In re Fine, supra* (any dependent claim that depends from a non-obvious independent claim is non-obvious). Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claims 24 to 31 is respectfully requested.

In summary, Applicants submit that claims 17 to 31 are patentable over all of the references cited. Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claims 17 to 31 is respectfully requested.

V. Conclusion

Attached hereto is a marked-up version of the changes made to the Specification by the current Amendment. The attached page is captioned "**Version with Markings to Show Changes Made.**"

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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Dated: June 17, 2003

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CUSTOMER NO. 26646



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PATENT TRADEMARK OFFICE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The section captioned "ABSTRACT" has been amended as follows:

--A combined spring-and-shock-absorber system for supporting wheel suspensions or axles on a vehicle body has a tubular roll bellows (U-bellows) arranged between a wheel-bearing or wheel-controlling connection and a connection on the vehicle body side, the bellows being arranged between an outer bell and a rolling piston, the outer bell and the rolling piston, in each case, having at least partially varying diameters over the height of the corresponding component, and having walls that contact the tubular roll bellows. Both ends of the tubular roll bellows being sealingly secured on the rolling piston at segments having different diameters, the lower mounting section having a larger diameter than the upper mounting section. For this purpose, a tubular roll bellows is used, which is configured as a differential roll bellows, whose interior is filled with a fluid and communicates with a hydraulic accumulator supported on the chassis and/or vehicle body.[

] On the basis of the present invention, a combined spring-and-shock-absorber system is developed, which contains a friction-free displacement device in a thin construction.--.